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Adams, Virginia Watson

ADOLESCENT MOTHERS PERCEPTION OF THEIR INFANTS AND QUALITY
OF MOTHER-INFANT INTERACTION

The University of North Carolina at Greensboro

Ph.D. 1985

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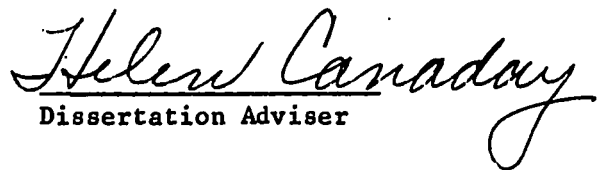
by

Virginia Watson Adams

A Dissertation Submitted to the
Faculty of the Graduate School at
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Doctor of Philosophy

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1985

Approved by


Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

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ADAMS, VIRGINIA WATSON, Ph.D. Adolescent Mothers Perceptions of their Infants and Quality of Mother-Infant Interaction. (1985) Directed by Dr. Helen Canaday. Pp. 81.

The major purpose of the study was to assess the value of a mother-infant acquaintance program for adolescent mothers. Adolescent mothers' perception of their own infants was compared with their perception of the average infant at one to two days postpartum and one-month postpartum. Quality of care was assessed at one-month postpartum.

The subjects were 47 first-time adolescent mothers who had normal spontaneous vaginal deliveries and their infants who were free of physical defects. The adolescent mothers were randomly assigned to one of three groups for comparison; a control group, a telephone group and an experimental group.

The data were collected using the Neonatal Perception Inventories and Degree of Bother Inventory (Broussard, 1964). The scores were analyzed using Analysis of Variance. The significance level was set at the .05 critical value level for a two tailed test.

The following hypotheses were formulated: (1) all three groups would have negative perceptions of their infants at one to two days postpartum; (2) adolescent mothers in the experimental group would have more positive perceptions of their infants at one-month postpartum than the control and telephone groups; (3) adolescent mothers in the control and telephone groups would have negative perceptions of their infants at one-month postpartum; (4) adolescent mothers who have positive

perceptions would experience good quality mother-infant interaction; and (5) adolescent mothers who have negative perceptions of their infants at one-month postpartum would experience poor quality mother-infant interaction.

The results of the data revealed that all three groups of adolescent mothers indicated positive maternal perceptions of their infants one to two days postpartum. Even though the scores were positive for the experimental group at one-month postpartum, there was no evidence that the mother-infant acquaintance program produced significant results. Adolescent mothers who were not a part of the mother-infant acquaintance process also scored favorably at one-month postpartum. Each group indicated good quality interaction.

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CHAPTER I

INTRODUCTION

Children born to adolescent mothers are considered high risk because most young mothers lack appropriate parenting skills. They lack understanding of infants and the competency of infants. Hoekelman (1983) defined high risk parenting as a social condition in which the normal patterns of parent and child behavior and interaction are disturbed. These disturbances occur under countless circumstances, which lead to the likelihood of the adolescent mother's being socially isolated, psychologically depressed, and educationally deprived, often suffering irreversible damage. To the task of her own development, she must add the task of family development. Role conflict occurs as she becomes involved in two developmental processes at the same time. In this normative crisis of adolescence when the need for independence is strong, the adolescent mother is dealing with her role conflict of family development which carries a strong need for dependence. The issue is compounded when the adolescent mother has little knowledge regarding the competency or capacity of a dependent infant and subsequently fails to recognize and respond to cues that could lead to mutually satisfying parent-child interactions.

Research endeavors have indicated that infants who are not perceived by their mothers as being better than average are at higher risk for subsequent emotional developmental problems than infants who are viewed as better than average (Broussard, 1976). Broussard and

Hartner (1971) in a longitudinal study on mothers' perceptions of their firstborns isolated a critical variable. These researchers believed that the development of optimal mother-infant interaction was vulnerable because of the lasting influence that the mother's initial perception had on her subsequent parenting of her child. The mother's perception of her infant at one month of age was associated with the need for later intervention in the mother-infant interaction process. The mother-infant interactions begin at birth with the process of acquaintance. The mother's initial perception of the infant's appearance and behaviors will influence her interactions. At the same time, the infant's behavior will be influenced by the manner in which the mother interacts and handles the infant. Kennedy (1973) defended the mother-infant acquaintance process as being more likely to occur when the mother was encouraged to hear about the unique features and traits that individualized her infant. If the acquaintance is process positive, then the interactions that influenced the acquaintance are likely to continue.

Clearly, there is some conflict when an adolescent mother must begin to provide emotional support to an infant and at the same time require emotional support for herself. This mother is not likely to spend time becoming acquainted with her child. If the need for emotional support to the teen mother is unmet, she may not be able to provide emotional support to her infant. Hence, her perception of her infant may be negative. Health-care providers subsequently are constrained to determine how much this problem of negative perceptions contributes to later problems such as child neglect and abuse. Teen

mothers have been observed to be intolerant, impatient and inclined to use physical punishment with their children (Delissovoy, 1973).

Inherent in the new baby/new mother situation is the potential for health-care providers to identify and correct situations in which adolescent mothers have negative perceptions of their infants.

Purposes of the Study

The purposes of the study were (1) to assess the value of a mother-infant acquaintance program for adolescent mothers, (2) to determine the perception of adolescent mothers toward their infants, (3) to compare the perception of adolescent mothers toward their infants and the average infant, and (4) to ascertain whether there is a relationship between adolescent mothers' perception of their infants and the quality of care. For the present study the following objectives were established:

1. Determine the perception of adolescent mothers
toward the average infant one to two days
postpartum as measured by the Neonatal
Perception Inventory (NPI) at Time I.
2. Determine the perception of adolescent mothers
toward their infants one to two days
postpartum as measured by the NPI.

3. Use selected items from the Brazelton Neonatal Assessment Scale (BNAS) to assist a group of adolescent mothers to become acquainted with their infants.
4. Determine the perception of adolescent mothers toward the average infant one month after delivery as measured by the NPI at Time II.
5. Determine the perception of adolescent mothers toward their infants one month after delivery as measured by the NPI.
6. Determine the degree to which adolescent mothers were bothered by their infants' behavior one month after delivery as measured by the Degree of Bother inventory (DBI) at Time II.
7. Analyze statistically the relationship between adolescent mothers' perceptions of their infants and the quality of mother-infant interaction.

Hypotheses

The following hypotheses were utilized for the present study:

1. Adolescent mothers in the control and experimental groups will score average or less than average on the NPI in their perceptions of their infants at Time I.
 2. Adolescent mothers who get acquainted with their infants purposively will score better than average in their perceptions of their infants at the end of one month.
 3. Adolescent mothers who do not get acquainted with their infants purposively will score average or less than average in their perception of their infants at the end of one month.
 4. Adolescent mothers who have better than average (positive) perception scores on the NPI one month postpartum will experience good quality mother-infant interactions as measured by the Degree of Bother Inventory.
 5. Adolescent mothers who have average or less than average (negative) perception scores on the NPI one month postpartum will experience poor quality mother-infant interactions as measured by the Degree of Bother Inventory.
-

Definition of Terms

The following definitions provided understanding of certain terms throughout the study

Adolescent mothers. Females between the ages of 13 and 19 years who have delivered newborn babies.

Apgar Score. A way of evaluating the physical condition of an infant immediately after birth.

Degree of Bother Inventory. An instrument used to measure quality of mother-infant interaction.

Good quality interaction. A score of 15-24 on the Degree of Bother Inventory.

Negative perceptions. Negative value scores on the Average Baby and Your Baby Forms of the Neonatal Perception Inventory.

Neonatal Perception Inventory (NPI). An instrument used to measure maternal perceptions of the average infant their own infant.

Perception. The score that the adolescent mother makes on the Neonatal Perception Inventory.

Quality of mother-infant interaction. The score obtained on the Degree of Bother Inventory.

Poor quality interaction. A score of 6-14 on the Degree of Bother Inventory.

Positive perceptions. Positive value scores on the Average Baby and Your Baby Forms of the Neonatal Perception Inventory.

Time I. One to two days postpartum.

Time II. One month postpartum.

Limitations of the Study

This study was limited to adolescent mothers who delivered in Forsyth County, North Carolina, between the months of October 1984 and March 1985. It was further limited to those mothers who had normal spontaneous vaginal deliveries. Cesarean births were not included.

Another limitation included the criterion of first-time mothers. There was an overwhelming number of second and third-time adolescent mothers in North Carolina and Forsyth County. Only those mothers who were delivering an infant for the first-time were selected to participate.

The adolescent mothers who were selected were further screened to include only those whose infants were free of physical defects and disorders. Screening for physical defects, an Apgar score between 7 and 10 points indicated satisfactory heart rate, respiratory effort, muscle tone, reflex irritability, and color.

Plan of the Study

Chapter II reviews the literature as it relates to adolescent development and family development with a specific focus on the adolescent mothers' ability to nurture. Chapter III deals with the methods and procedures used to measure maternal perceptions of the average infant and their own infant at two different points in time. The data are analyzed and discussed in Chapter IV. Conclusions are drawn and recommendations are made in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

The adolescent first-time mother is believed to be involved in two developmental processes at the same time-- her own, as explained by Erik Erikson's concept of ego identity resolution, and the family developmental task of nurturing a newborn (Reiss, 1965). The conflict inherent in these simultaneous processes could develop into less than satisfying interactions between the mother and her child.

Concept of Adolescent Ego-Identity

Popular theory argues that in order for the female adolescent to resolve her ego identity crisis effectively, she must first have a stable love relationship. Identity formulation clearly has its roots in childhood, but the crystallization of identity is considered by many to be the central developmental task of adolescence: a period for integrating one's sexual identity, goals and aspirations, personal ethics, and other features of self-development. This period of integration represents a reorganization of self provoked by pubertal changes, mounting cultural pressures for independence and decisive personal action, and the assumption of broader responsibilities to oneself and others (McCandless, 1973).

In an effort to maintain links with traditional psychoanalytic theory, but also to expand it, Erikson developed the concept of "ego identity" (1959, p.101). Adolescents with a strong sense of ego identity see themselves as distinctive individuals in their own right. Closely related is the need for self-consistency to maintain a feeling of wholeness. According to Erikson, the young persons must feel a progressive continuity between that which they have come to be during the years of childhood and that which they promise to become in the anticipated future, in order to experience wholeness. They must also feel some continuity between what they perceive themselves to be and what they perceive that others see in them and expect of them (Erikson, 1959).

According to Erikson, any developmental influences that contribute to confident perceptions of oneself as separate and distinct from others, as reasonably consistent and integrated, and as having a continuity over time, also contribute to an overall sense of ego identity. By the same token, influences that may impair any of these self-perceptions foster what Erikson initially referred to as "identity diffusion" but which he later preferred to call "identity confusion-- a failure to achieve the integration and continuity of self-image" (Erikson, 1959, p.103). Unlike the middle childhood years and following discontinuity theory, the rapid quantitative and abrupt qualitative changes of adolescence increase the difficulty of achieving and maintaining a perception of the self that is clearly defined and consistent, both internally and over time. While identity is constantly subject to change, it is during adolescence that identity is also

subject to a crisis defined by Erikson as a necessary turning point, a critical moment, when development must move one way or another marshalling resources of growth, recovery, and further differentiation. This crisis also involves the final establishment of a dominant positive ego identity.

For positive ego identity resolution, Erikson (1968) maintained that the adolescent must arrive at a commitment, a genuine personal investment including both occupation and ideology. Choosing an occupation requires the establishment of priorities, including occupational goals and ambitions, in such a way that one selects a direction for one's life. Ideology commitment refers to the development of a consistent personal position on basic matters such as religion, politics, and ethics. The term identity crisis refers to a period of decision making, examining of alternatives, and active questioning. When doubt, bewilderment, sexual insecurity, lack of autonomy, and failure to reach commitment combine to interfere with ego identity, this developmental hazard of adolescence is addressed as identity diffusion or role confusion.

According to Douvan and Adelson (1966), the adolescent female is likely to arrive at an identity resolution through interpersonal behavior, and then, only after she has reached some relatively satisfactory integration of intimacy and the erotic. They further theorized that Erikson's sequence of stages from identity to intimacy proceeds in the reverse for females. Their data suggest that females must satisfy their affiliative needs and resolve the ambiguity about

their future and their status through marriage before they can proceed to a resolution of personal identity. However, their data were drawn from a representative middle class population of the late 1950's in which the traditional sex roles and values for males and females were probably still in operation.

Heilbrum (1964) suggested that better adjustment for females was associated with being highly feminine or highly masculine, with psychological difficulties more likely to occur if some intermediate sexual identity were achieved. His support of role diffusion was demonstrated when it was found that females at either extreme of sexual identity, high or low feminine, perceive themselves as more stable in their interpersonal behaviors than those falling in between. Females who fulfill neither the traditional role nor the modern masculinized role may be expected to show lower interpersonal stability because the elements of both are mixed in their behavior. It is through a high interpersonal stability that the female adolescent can proceed to resolve her personal identity.

Erikson (1959) maintained that individuals who are able to resolve their ego identity crises are definite about who they are and where they are going and also feel confident concerning their self-perception and the way they are perceived by others. Other researchers have suggested that the process of resolving the ego identity crisis was normally more difficult for females than for males (Douvan & Adelson, 1966; Constantinople, 1969). There is great approval seeking among some females (Marcia & Fredman, 1970) and a decline in ego sufficiency of

females from adolescence to young adulthood (Nawas, 1971). Adolescent mothers who have difficulty in resolving their ego identity crisis will have difficulty with their ability to nurture.

Adolescent Mothers' Ability to Nurture

Many adolescent females are beginning family life before their own nurturing is complete. It is commonly believed that adolescent females who choose to become mothers have an overwhelming potential to suffer irreversible damage financially, socially, psychologically, and educationally. Because the tasks of family development are now added to the task of adolescent development, the adolescent mother is now believed to be in two developmental processes at the same time. In this normative crisis of adolescence when the need for independence is strong, the adolescent mother is dealing with her role conflict of family development which carries a strong need for dependence. The transition to parenthood can be a blissful stable period. The adolescent mother, however, who is still seeking her personal identity often discovers that the transition period is fraught with problems. The conflict between the wish to grow up and the wish to hold on to childhood securities must now be resolved in the adolescent mother's attempt to nurture. Adolescent mothers who use naive solutions to childrearing problems and who lack adequate judgement in nurturing their offspring are believed to promote family disorganization. Children of adolescent mothers who have low competence in nurturing are likely to have low self-esteem (Smoyak, 1977).

The Importance of Nurturing

Harry Harlow's 1962 studies of the Rhesus monkeys illustrated the need for nurturance. Harlow separated monkeys from their natural mothers and raised them with surrogate mother dolls which were made of cloth and surrogate mothers made of wire. In one experiment the wire mother doll was equipped with milk for the monkeys while the cloth mother doll was not. When the monkeys were threatened they demonstrated their preference by running more to the cloth mother and by exerting themselves more to press a lever to see the cloth mother. This demonstration was interpreted as a preference for the softer contact and resultant comfort offered by the cloth mother doll. Harlow's study indicated that mother-infant love is strongly related to providing comfort in physical contact which constitutes a part of nurturance.

Other important findings were revealed through Harlow's investigations. The monkeys who were raised by surrogate mothers, either cloth or wire, became emotionally disturbed and were unable to relate to other monkeys or to perform sexually. The effect was irreversibly produced in about six months. This finding suggested that the emotional response of live monkeys was as important as the emotional support for the infant monkeys. These results assisted in supporting the definition of nurturance.

Yarrow (1961) and Klaus et al. (1970), in reviews of maternal deprivation studies, concluded that early tactile stimulation seemed essential for human development and assisted in development of maternal affectional ties. When care is impersonal and inadequate, there is

evidence of language retardation, impairment of motor functions, and limited emotional response toward other people and objects. Women who express positive feelings about babies and who consider the well-being of the infant to be of essential importance tend to be more responsive to signals of distress from the infant than women who exhibit negative maternal attitudes (Moss, 1967); hence, the psychological status of the mother is predictive of her maternal behavior.

Maturational Crisis of Family Development

The adolescent mother is caught between a maturational crisis of adolescence and a conflicting maturational crisis of family development. The more competent the adolescent mother is in resolving her tasks of adolescence, the more competent will be her skills in parenting.

Parenting has not been proven to be a naturally evolving role or skill that coincidentally begins with the birth of a child. Parenting skills include the ability to understand child development, availability to solve problems, and an understanding of how self-behavior can influence a child's behavior. Coupled with the dependency of infancy, the mother herself experiences an increase in dependent behavior and surfacing of unresolved conflicts from childhood (Hrobsky, 1977). The greater the acceptance from the kinship group of this temporary bid for dependency, the greater the adolescent mother's ability to accept the infant's dependency.

Early studies suggested that beginning parenthood is a severely stressful experience (LeMasters, 1957; Dyer, 1963), while more recent investigations (Hobbs, 1965, 1968; Russell, 1974) revealed the addition of a first child as a period of transition which is somewhat stressful. Considerations given to the studies by LeMasters (1957) and Dyer (1963) include the following: (a) the subjects were exclusively middle class and drew high crisis scores, and (b) the data were collected during the 1950's when there were more unhappy marriages (Burchinal, 1960) coupled with a prevalence of pregnancy at the time of marriage. These two studies suggested that the higher the social class the more stressful the transition to parenthood.

Parent role skills are achieved through cultural expectation, enactment, and covert rehearsal. Social learning theory suggests that the woman's capacities to provide maternal nurturance to her infant are related to the quality of the nurture and care she herself received in infancy and childhood. The adolescent mother who learned acceptance and patience out of social interaction with her parents is likely to exhibit higher levels of acceptance and patience toward her offspring than the adolescent mother who was not reinforced with these values from her parents. This hypothesis was supported by Malony (1978) who believed that parents would be ignored if they were not good role models for their children and that children would choose other models.

The responsibility of nurturing is also considered in terms of institutional and family support systems rather than the childbearer in isolation (Rossi, 1968). In a study of a program called "Young Mothers'

Educational Development," Osofsky and Osofsky (1970) demonstrated that given personal and adequate medical care, social service assistance, and continuous counseling, low-income mothers graduate from high school and some continue for higher education. They no longer need public assistance. This study also measured maternal and infant behavior during the mother-child interaction. The mothers exhibited high measures of warmth and physical interaction with their infants but low ratings on measures of verbal interaction. The infants had higher scores on the measures of activity and lower scores on the measures of responsibility and affectivity.

The literature reviewed suggested that the ability of the adolescent mother to nurture is directly related to (a) the resolution of her ego identity crisis, (b) knowledge and utilization of available resources, (c) the support of a kinship group, and sometimes, (d) an intimate relationship with a mate. The stress involved with developing a meaningful relationship with a mate could compound the conflicts of adolescent maturation and family development maturation. Delissovoy stated that "many children of adolescent marriages have a high risk of joining the number of battered and abused babies" (1973, p.22).

It is generally believed that the future of any society depends upon the development of its children and that children have basic inherent rights of health, education, and welfare. It then stands to reason that society should assist adolescent mothers by making accessible those resources that promote functions of family development. The literature further suggested that nurturance to the adolescent

mother is of paramount importance while she is experiencing her crisis periods. The key solution at this point is the kinship group that supports positive mother-infant interaction.

CHAPTER III

METHODS AND PROCEDURES

This study proposed to measure the relationship between adolescent mothers' perception of their infant and the quality of mother-infant interaction. The adolescent mother's initial perception of her infant was believed to be a primary influence on the development of optimal mother-infant interaction. The honeymoon period of becoming acquainted with an infant and determining perception was believed to begin at birth and last for a minimum of one month.

Design.

This experimental design involved the dependent variables "Maternal Perception of the Average Baby" and "Maternal Perceptions of Your Baby" at two different points in time. The independent variables were measured one to two days postpartum (Time I) and one month postpartum (Time II). The dependent variable, quality of mother-infant interaction, was measured at Time II. The experimental treatment was the mother-infant acquaintance process. The following is a summary of the design procedure.

Group I- Control Group

(a) Completed the NPI at Time I and Time II.

(b) Completed the DBI at Time II.

Group II- Telephone Group

(a) Completed the NPI at Time I and Time II.

(b) Had telephone contact with the health-care professional one week postpartum (Week I), two weeks postpartum (Week II), and three weeks postpartum (Week III), to answer questions regarding infant care.

(c) Completed the DBI at Time II.

The following is a list of prepared questions that were used with the telephone group. On Week I, each of the questions was asked. In subsequent weeks, the questions were modified and communication centered around concerns of the previous week.

1. How do you know when your baby is hungry?
2. What do you do when your baby is hungry?
3. Tell me how much formula your baby is drinking.
4. Are you using disposable or cloth diapers?

5. How does your baby let you know that he needs diapering?
6. Do you wait or go ahead with the diapering?
7. How does your baby respond?
8. How does your baby let you know he wants to be held, sung to, cuddled, or comforted?
9. What do you do when your baby lets you know?
10. How does your baby respond?
11. Are you having any problems that I can help you with?

Group III- Experimental Group

- (a) Completed the NPI at Time I and Time II.
 - (b) Had home visits by the health-care professional at Week I, Week II, and Week III for the experimental treatment, mother-infant acquaintance process.
 - (c) Completed the DBI at Time II.
-

Hypotheses

The following hypotheses were tested.

1. Adolescent mothers in the control and experimental groups will score average or less than average on the NPI in their perceptions of their infants at Time I.
2. Adolescent mothers who get acquainted with their infants purposively will score better than average on the NPI in their perceptions of their infants at the end of one month.
3. Adolescent mothers who do not get acquainted with their infants purposively will score average or less than average in their perception of their infants at the end of one month.
4. Adolescent mothers who have better than average (positive) perception scores on the NPI at Time II will experience good quality mother-infant interactions as measured by the Degree of Bother Inventory.
5. Adolescent mothers who have average or less than average (negative) perception scores on the NPI at time II will experience poor quality mother-infant interactions as measured

by the Degree of Bother Inventory.

Selection of Instruments

Perception was measured by the Neonatal Perception Inventories (NPI) consisting of the "Your Baby" and "Average Baby" questionnaires developed by Elsie Broussard (1964). These inventories located in Appendix A were designed to measure the mother's perception of her own infant as well as her concept of the average baby on six behavioral items-- crying, spitting, feeding, elimination, sleeping, and predictability. The quality of mother-infant interaction was measured by the Degree of Bother Inventory (found in Appendix B) which assessed the extent to which the six behavioral items were perceived as problematic. A score of 6-14 on the Degree of Bother Inventory indicated poor-quality interaction. A score of 15-24 on the Degree of Bother Inventory indicated good-quality interaction.

The NPI was administered by the investigator at Time I in the hospital and at Time II in the home of the adolescent mother. Time I occurred one to two days postpartum in the hospital. Time II occurred one month postpartum in the home of the adolescent mothers.

Selection of Subjects.

The subjects selected for the study were 47 adolescent mothers and their infants. Prior to administration of the NPI, a signed participation agreement was obtained. It was explained to the adolescent mothers that the nature of participation was confidential and

anonymous. It was also explained that her participation was fully voluntary and that she was free to withdraw at any time. The adolescent mothers were those who

- (a) ranged in age from 13 to 19 years
- (b) had normal spontaneous vaginal deliveries
- (c) were first-time mothers
- (d) delivered apparently normal infants who were free of physical defects or disorders
- (e) and who scored between 7 and 10 points on the Apgar Scale at five minutes after birth.

These 47 first-time mothers were residents of Forsyth County who delivered at Forsyth Memorial Hospital between the months of October 1984 and March 1985. This medical facility was the only hospital in Forsyth County with labor and delivery services. Records in the hospital indicated an average of 350 deliveries per month, of which an average of 30 deliveries per month were by adolescent mothers.

Two eligible adolescent mothers refused to participate in the study. After the study was explained and the potential subjects had read the informed consent, these two mothers indicated that they were not interested in participating.

Upon delivery the adolescent mothers were randomly assigned either to one of the two control groups or to the experimental group.

Procedure.

All of the adolescent mothers who consented to participate in the study were asked to rate their babies at one to two days postpartum , while in the hospital. At Time I, they were asked to rate both the average baby and their own baby with the Average Baby and Your Baby Inventories, which when given together, were called the Neonatal Perception Inventory (NPI).

At Time II, which occurred at the end of four weeks, these primiparous adolescents were asked to complete the NPI again. Also, at Time II, the Degree of Bother (DBI) was administered. Time I occurred in the hospital but Time II occurred in the home of the adolescent mothers.

At Time I each adolescent mother had been assigned to one of three groups according to her infant's birth order. Group I which served as a control group had no contact with the examiner from Time I to Time II. Group II which served as a second control group had telephone contact with the investigator at one, two, and three weeks postpartum for the purpose of answering any questions regarding care of the infant. Group III which served as the experimental group had the benefit of personal contact with the examiner at one, two, and three weeks postpartum for the purpose of enhancing the mother-infant acquaintance process. These weekly contacts served to offer the adolescent mothers a systematic way

of observing and becoming acquainted with their infants' subtle responses in a supportive fashion. The end result was enhancement of the mother-infant acquaintance process.

The adolescent mothers were introduced to the states of being asleep and awake in the infant which included the following categories:

1	2	3	4	5	6
deep	light	drowsy	alert	active	crying
<hr/>			<hr/>		
ASLEEP			AWAKE		

A state was noted if the infant was in the particular state of asleep or awake for a minimum of 15 seconds. The states were recognized using the following guide:

ASLEEP STATES

(1) Deep Sleep

regular breathing, eyes closed, no spontaneous activity except startles or jerky movements, no eye movements; external stimuli produce startles with some delay.

(2) Light Sleep

eyes closed, rapid eye movements, low activity level with random movements. irregular breathing on and off sucking movements; external stimuli produces a change in state.

AWAKE STATES

(3) Drowsy

eyes may be open or closed eyelids fluttering, movements are smooth, may or may not be fussy. Sensory stimuli produces reaction.

(4) Alert eyes open, focus attention on source of stimulation, minimal motor activity.

(5) Active

eyes open, considerable motor activity with thrusting movements of extremities, reactive to external stimuli with increase in startles or motor activity.

(6) Crying

intense crying difficult to break through with stimulation.

The following items from the Brazelton Neonatal Assessment Scale (BNAS) were selected to serve as a guide in the mother-infant acquaintance process:

response decrement to a bell

orientation response-animate visual and auditory

alertness

cuddliness

consolability

startled response

hand-to-mouth facility

smiling

The adolescent mothers were asked to focus on the degrees of being asleep and awake in the infant and thus anticipate an appropriate response to each degree. Items from the BNAS were used to stimulate the infant while in the awake state. When the infants were in a state of deep sleep, they were observed but not awakened. The adolescent mothers in the experimental group were asked to use the measures from the BNAS and note the responses in their infants. There was an attempt made to bring the infants to the alert state and to focus on this state more than others. When adolescent mothers are made aware of the unique responses in their own infants, they are more likely to perceive their infants positively. The mother-infant acquaintance treatment lasted no more than 15 minutes in the home. Additional demographic data (recorded in Appendix E) were obtained from the adolescent mothers' medical records so as not to distract from the purpose of each visit.

Analysis of Data

An experimental design was utilized in the present study. Sixteen adolescent mothers in the control group, 16 mothers in the telephone group, and 15 mothers in the experimental group completed the NPI at Time I in the hospital. Thirteen mothers in the control group, 16 mothers in the telephone group, and 14 mothers in the experimental group completed the NPI and DBI at Time II in their homes.

Means and Frequencies were determined for adolescent mothers who completed the Neonatal Perception Inventories at Time I and Time II and the Degree of Bother Inventory at Time II. The means were examined by using the Analysis of Variance test. Chi-square Analysis was used to examine the frequencies. A .05 level of significance was established throughout analysis of the data.

The Statistical Consulting Center of the Academic Computer Center of the University of North Carolina at Greensboro was consulted for the statistical analysis of the data. SPSSX (SPSS Inc., 1983) was the statistical package used to analyze the items on the NPI and Degree of Bother Inventory in relation to the subjects.

Administration of Inventories

The Neonatal Perceptions Inventories were used to determine the mothers' baseline perceptions of infants. The NPI can be administered easily and quickly. The examiner stayed with the mother during administration of the NPI and waited for the mother to complete the

items. The instructions for giving the NPI (found in Appendix C) were altered slightly at Time II even though the procedure for administration remained the same as at Time I. The Average Baby Form was administered prior to the Your Baby Form.

After the NPI was given at Time II, the mother was given the Degree of Bother Inventory.

Each of the 12 behavioral items on the NPI was scored on a five point scale. Numerical weights of 1 to 5 were assigned to each of the single-item scales, ranging from 1 for "none" to 5 for "A great deal".

The following is an example of an item from the Average Baby Form:

"How much crying do you think the average baby does?"

5	4	3	2	1
-----	-----	-----	-----	-----
A great deal	a good bit	moderate amount	very little	none

The total scores for each perceptions inventory were obtained by adding the numerical scales for each of the items and then subtracting the total score of the Your Baby Perception from the total score of the Average Baby Perception Inventory. The difference between the two scores represented the NPI Score. A positive score indicated favorable maternal perception of the infant. A negative score indicated a less favorable maternal perception or less than average perception of the infant.

Broussard's original study involved 318 primiparas who delivered normal, full-term, single births. The total scores on the NPI ranged from 7 to 23 out of a possible score of 6 to 30. At Time I while they were still in the hospital, the mothers rated their infants as better than average 46.5% of the time. At Time II when the infants were approximately one month of age, the mothers rated their infants as better than average 61.2% of the time. Those mothers who rated their infants as better than average at Time II were less bothered by their infants' behavior (scores on DBI) than those mothers who did not view their infants as better than average (x^2 sg. at $P < .001$). The differences between the scores ranged from +9 to -9. Both inventories have shown construct and criterion validity (Broussard & Hartner, 1971).

The Degree of Bother Inventory was given to assess problems of infant behavior. It was administered at Time II when the infant was one month old. Values of 1 to 4 were assigned to each of the six items on the Inventory. The following is an example from the Degree of Bother Inventory.

Crying	_____1_____	_____2_____	_____3_____	_____4_____
	a great deal	somewhat	very little	none

The score was calculated by totaling the values. For the examiner, a score of 6-14 on the Degree of Bother constituted poor quality interaction. Good quality interaction was defined as a score of 15-24 on the Degree of Bother Inventory. Broussard found high face validity on this inventory.

CHAPTER IV

RESULTS AND DISCUSSION

The purpose of this study was to measure the relationship between adolescent mothers' perceptions of their infants and the quality of mother-infant interaction. Forty-seven adolescent mothers and their infants from Forsyth County North Carolina were included for data collection.

Description of the Sample

The 47 adolescent mothers included in the sample were described according to age, attendance at childbirth classes, receipt of analgesic medications during labor, race, marital status, and support at home. The infants were described according to sex, Apgar scores at one and five minutes after birth, birthweight, and age of father.

The study limited participation to adolescent mothers who (a) ranged in age from 13 to 19 years, (b) had normal spontaneous vaginal deliveries, (c) were first-time mothers, (d) delivered apparently normal infants free of physical defects, and (e) scored between 7 and 10 points on the Apgar Scale at five minutes after birth.

Age, Feeding, Childbirth Classes,Medications, Race, andMarital Status

The adolescent mothers ranged in age from 13 to 19 years. Over one third of the 47 adolescent mothers was 19 years of age. The mean age of the adolescent mothers was 17.4 with a standard deviation of 1.6 years. Seventy-five percent of the adolescent mothers in the control group were in their late teens and were between 18 and 19 years. The telephone group contained 62.5% of the late teens. The experimental group contained mostly middle teens (46.7%) between the ages of 16-17 years.

An overwhelming majority of the mothers in the sample chose to bottlefeed their infants. In both the control and experimental groups, 93.3% of the mothers chose bottlefeeding while 81.3% of the telephone group made the same decision.

Almost all of the adolescent mothers declined to attend childbirth classes. None of the adolescent mothers in the control group attended childbirth classes. Childbirth classes were not chosen by 87.5% of the telephone group while 93.3% of the experimental group chose not to attend.

The majority of the mothers in all three groups received analgesic and/or narcotic medications to control pain during the labor process. Three fourths (75%) of the adolescent mothers in the control group, one half of the mothers in the telephone group, and just over half of the mothers in the experimental group received these medications to control

pain during the labor process.

A majority of the black adolescent mothers (73.3%) who consented to participate in this study were in the experimental group. Fifty-one percent of the mothers in the total sample were black and 46.8% of the adolescent mothers were white. One American Indian mother was included in this sample. There were equal percentages (56.3%) of white mothers in the control and telephone groups.

The majority of the adolescent mothers were single parents; only 27 percent of the adolescent mothers were married. Eighty percent of the experimental group were not married and 56.3% of the telephone group were not married. The demographic characteristics of the adolescent mothers are summarized in Table 1 according to their age, type of feeding, childbirth classes, medications during labor, race, and marital status.

Table 1

Demographic Characteristics of Adolescent Mothers by Group

	CONTROL GROUP % n=16	TELEPHONE GROUP % n=16	EXPERIMENTAL GROUP % n=15

VARIABLE			
Age			
13-15 (7)	12.5	12.5	20.0
16-17 (13)	12.5	25.0	46.7
18-19 (27)	75.5	62.5	33.3
Type of Feeding			
Bottle	93.8	81.3	93.3
Breast	6.3	12.5	6.7
Switched from Breast		6.3	6.7
Childbirth Classes			
Did Attend	0.0	12.5	6.7
Did Not Attend	100.0	87.5	93.3
Medications During Labor			
Received	75.0	50.0	53.3
Did Not Receive	25.0	50.0	46.7
Race			
Black	43.8	37.5	73.3
White	56.3	56.3	26.7
Indian		6.3	
Marital Status			
Married	18.8	43.8	20.0
Not Married	81.3	56.3	80.0

Sex, Parents Age, Birthweight,

and Apgar Scores

Fifty seven percent of the infants born to mothers in the study were females. Infants from the control group comprised 62.5% female and 37.5% male. The telephone group was equally divided between female and male infants.

Even though all of the mothers in this sample were adolescents, the same was not true of the fathers of these infants. The mean age of the adolescent mothers was 17.4 with a standard deviation of 1.6 years. The mean age of the fathers was 20.3 with a standard deviation of 3.7 years. In the control group, the mothers had a mean age of 17.8 years and a standard deviation of 1.5 years. Control group fathers, who ranged in age from 15 to 31 years had a mean age of 20.3 and were more widely spread with a standard deviation of 3.7. The average age of the mothers in the telephone group was 17.6 years with a standard deviation of 1.4 years. Fathers in the telephone group had a mean age of 20.1 years and standard deviation of 1.9. The experimental group contained the youngest parents. The mean age of the mothers was 16.7 and the mean age of the fathers was 19.3 years. The standard deviations were 1.7 and 2.3 respectively.

Birthweight mean was 7.28 lbs for the 47 infants born to adolescent mothers. The males were slightly heavier than females with mean birthweights of 7.34 and 7.23 respectively. In the control group, the females weighed 7.33 lbs and the males weighed 7.26 lbs. Males in the telephone group weighed 7.81 and females in this group weighed 7.46 lbs.

The experimental group contained the lowest infant birthweights. The females weighed 6.9 lbs and the males weighed 6.8 lbs.

The Apgar Scores for the 46 infants included in this sample had a mean of 7.6 one minute after birth. One of the infants born did not have an Apgar score obtained at one minute and therefore was not included in the Apgar 1 analysis. Five minutes after birth, the mean Apgar score for the 47 infants was 9.0. In the control group, the Apgar score taken one minute after birth was 7.1 and increased to 9.1 five minutes after birth. In the telephone group, the mean Apgar Score of the infants was 8.4 one minute after birth and 9.1 after five minutes. Infants in the experimental group had a mean Apgar score of 7.4 one minute after birth that increased to 8.9 five minutes after birth.

The demographic characteristics of infants born to adolescent mothers are presented in Table 2.

Table 2

Demographic Characteristics Infants of Adolescent Mothers by Group

	Control	Telephone	Experimental
	Group	Group	Group
	Means	Means	Means
	n=16	n=16	n=15
Variable	Mean S.D.	Mean S.D.	Mean S.D.
Age of Mother	17.8 1.50	17.6 1.40	16.70 1.7
Age of Father	20.3 3.70	20.1 1.90	19.3 2.30
Birthweight	7.3 .83	7.6 .95	6.8 .75
Apgar 1	7.1 2.10	8.4 .51	7.4 1.95
Apgar 5	9.1 .57	9.1 .34	8.9 .45

Hypothesis One

The hypothesis that adolescent mothers in Groups I, II, and III will score average or less than average (negative) scores on the NPI at Time I was rejected.

All three groups of adolescent mothers indicated a favorable maternal perception of their infants. The means were positive rather than negative. In Table 3 the means are presented for each group on the Neonatal Perception Inventory at Time I.

Table 3

Group Means on NPI

	Control Group	Telephone Group	Experimental Group
	n=16	n=16	n=15
Mean	1.5	1.5	2.9
S.D.	2.4	2.0	2.7

Analysis of Variance in Table 4 revealed that no two groups were significantly different at the .05 level at Time I while in the hospital. Maternal perception was viewed positively one to two days postpartum by each group of adolescent mothers.

Table 4

Analysis of Variance of Maternal Perception at Time I
for Control, Telephone and Experimental Groups

Source	D.F.	Sum of squares	Mean squares	F ratio	F prob
Between groups	2	16.8965	8.4482	1.4696	.2411
Within groups	44	252.9333	5.7485		

Most of the adolescent mothers rated their infants positively or better than average at Time I in the hospital. Ninety-three percent of the adolescent mothers in the telephone group and 75% of the mothers in the control group rated their infants positively. Adolescent mothers in the experimental group rated their infants as better than average 86.7% of the time. Frequency of positive and negative scores for each group at Time I are found in Table 5.

Table 5

Frequency of NPI Scores

	Control	Telephone	Experimental
	Group (%)	Group (%)	Group (%)
	n=16	n=16	n=15
Positive			
scores	75.0	93.7	86.7
Negative			
scores	25.0	6.3	13.3

Possible scores on the Average Baby and Your Baby NPI range from 6 to 30. The total scores for adolescent mothers on the Average Baby NPI1 ranged from 12-24 while their total scores on the Your Baby NPI2 ranged from 11-22. The NPI Difference Scores, obtained by subtracting the Your Baby score from the Average Baby score ranged from -2 to +7. Means on the "Average Baby" and "Your Baby" NPI are found in Table 6.

Table 6

Means on Average Baby and Your Baby NPI

	Control	Telephone	Experimental
	n=16	n=16	n=16
Average			
Baby	17.76	18.00	19.06
Your			
Baby	17.00	15.50	19.14

Hypothesis Two

The hypothesis that the adolescent mothers who get acquainted with their infants purposively will score better than average in their perceptions of their infants at the end of one month was rejected .

The mean for the experimental group on the NPI was 3.28 with a standard deviation of 2.64. Approximately 86% of the time, adolescent mothers in the experimental group rated their infants as better than average.

Even though the scores were positive, there was a one percent decrease in positive perception from Time I to Time II. There was also a decrease in sample size at that Time. Table 7 illustrates the means of each group on the NPI at Time II.

Table 7

Neonatal Perception Inventory II

	Control	Telephone	Experimental
	Group	Group	Group
<hr/>			
Mean	2.69	1.81	3.28
S.D.	2.89	2.42	2.64
N	13	16	14

Hypothesis Three

The hypothesis that adolescent mothers who do not get acquainted with their infants purposively will score average or less than average in their perception of their infants at the end of one month, was rejected.

Groups I and II, the control and telephone groups, were not a part of the mothers infant acquaintance process. These groups scored better than average on the Neonatal Perception Inventory II. The better than average scores indicated a positive or favorable maternal perception of the control and telephone groups toward their infants. Mean scores were 2.69 and 1.81 for the control and telephone groups, respectively. Approximately 77% of the control group had positive perceptions of their infants. Close behind the control group were the adolescent mothers in the telephone group with 75% positive perceptions. Summaries of the

perception scores by each group are presented in Table 8.

Table 8

Perception Scores by Group

	Control	Telephone	Experimental
	Group	Group	Group
	n=13	n=16	n=14
Negative			
Scores	23.1	25.0	14.3
Positive			
Scores	76.9	75.0	85.7

Hypothesis Four

The hypothesis that adolescent mothers who have better than average or positive scores on the Neonatal Perception Inventory at Time II will experience good quality mother-infant interaction, as measured by the Degree or Bother Inventory, was not rejected. Shown in Table 9 are the means on NPI2 and the Degree of Bother Inventory.

Table 9

Means on NPI2 and Degree of Bother

	Control	Telephone	Experimental
	Group	Group	Group
<hr/>			
NPI2	2.69	1.81	3.28
Bother	18.69	16.93	17.92

Means for the three groups of adolescent mothers were positive. Adolescent mothers voiced favorable perceptions toward their infants after living with them for a month. These couples experienced good-quality mother-infant interactions as indicated by the Degree of Bother Inventory. The group means were over 15 points in all three groups.

ANOVA in Table 10 revealed that no two groups were significantly different at the .05 level on Degree of Bother and positive/negative perceptions.

Table 10.

Analysis of Variance for Positive and Negative Perceptions

Source	D.F.	Sums of Squares	Mean Squares	F-Ratio	F-Prob
Between	2	16.541	8.270	1.1812	.317
Within	40	280.064	7.002		

Hypothesis Five

The hypothesis that adolescent mothers who have average or less than average (negative) perception scores on the NPI at Time II will experience poor-quality mother-infant interactions as measured by the Degree or Bother Inventory, was not rejected.

Nineteen of the 43 adolescent mothers had negative perception scores at Time II on the NPI. Also, at Time II, the telephone group held the most negative scores while the experimental group held the lowest negative scores.

There was a higher percentage of positive scores in the experimental group at Time II. The Degree of Bother Inventory, which was given at Time II produced the results found in Table 11.

Table 11

Degree of Bother Inventory Means by Group

	Control	Telephone	Experimental
	Group	Group	Group
	n=13	n=16	n=14
<hr/>			
Means	18.69	16.93	17.92
S.D.	2.98	2.93	2.97
Range	13-23	11-24	13-21

Discussion

The results of this study were based on adolescent mothers' scores on the Neonatal Perception Inventory and the Degree of Bother Inventory. The NPI was administered one to two days postpartum and at the end of one month postpartum. At the end of one month, the Degree of Bother Inventory was also administered to the adolescent mothers. The Neonatal Perception Inventories are included in Appendix A. The Degree of Bother Inventory is included in Appendix B.

Primiparous mothers have indicated favorable maternal perceptions of their infants at one to two days postpartum and also after living with their infants for a period of one month. At the end of one month, these adolescent mothers experienced good quality mother-infant interaction. After the adolescent mothers in the experimental group

were exposed to a systematic way of becoming acquainted with their infants, there was no statistically significant increase in their favorable maternal perceptions. At Time I, while they were still in the hospital, the first-time mothers rated their infants as better than average 72% of the time. At Time II, when the infants were approximately one month of age, the mothers rated them as better than average 79% of the time.

Adolescent mothers in the experimental group had various characteristics. Most chose to bottlefeed and not to attend childbirth classes. Over half of this group received analgesic and/or narcotic medications to control pain during the labor process. Most of the adolescent mothers in the experimental group were single black parents. This group also had the youngest adolescent mothers, contained the lowest infant birthweights, and yielded the lowest in Apgar scores after five minutes. The experimental group scored 2.9 on the NPI1 and 3.28 on the NPI2. Even though the group increased its score, the gain was not statistically significant.

Chapter V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purposes of the study were (1) to assess the value of a mother-infant acquaintance program for adolescent mothers, (2) to determine the perception of adolescent mothers toward their infants, (3) to compare the perception of adolescent mothers toward their infants and the average baby, and (4) to ascertain a relationship between adolescent mothers perceptions of their infants and quality of care.

The study included the neonatal perceptions of adolescent mothers one to two days postpartum and one month following the birth of the infant. Adolescent mothers completed the Degree of Bother Inventory to ascertain quality of care at the end of one month postpartum.

The sample involved 47 adolescent mothers and their infants who delivered in Forsyth County, Winston-Salem, North Carolina between the months of October 1984 and March 1985. Data were collected by the researcher during daily visits to the obstetrical unit and weekly visits at the home of the mothers.

The Brazelton Neonatal Assessment Scale (BNAS) was used to raise the consciousness of adolescent mothers by drawing attention to features about the infant that they otherwise might not see. The experimental treatment using the BNAS was twofold. The adolescent mother observed the infants in degrees of both sleeping and waking states. They were

then assisted in using selected items from the BNAS to stimulate and observe responses in their infants. The process had the result of enhancing the mother-infant acquaintance process. This process served as the experimental treatment used by the health professional and permitted the health-care giver to enter the lives of infant and adolescent mother in order to influence perception and interaction.

No significant relationships resulted from the five hypotheses tested. A summary of the hypotheses is noted.

1. The hypothesis that adolescent mothers in the control, telephone, and experimental groups would have negative or less than average perceptions of their infants at Time I was rejected. There were no differences among the groups' perceptions, and each of the group perceptions was positive.
2. The hypotheses tested for differences among the control, telephone, and experimental groups after the experimental group was exposed to a mother-infant acquaintance process was rejected. The mother-infant acquaintance process did not influence the experimental group to see their infants any more positively than the control and telephone groups.

3. The hypothesis testing for differences and frequencies of telephone and control groups after the experimental group had been treated was rejected. The two groups who were not a part of the treatment process perceived their infants positively after living with them for one month.

Conclusions

These data suggest that adolescent mothers in the research study may have had positive ego identity resolution as defined by Erikson (1968). The mothers had made a very definite step toward the commitment of parenthood. Unlike the 1950's, traditional values no longer prevail, and adolescent mothers are more likely to be single than married. The dilemma of family development and adolescent development simultaneously did not appear to have affected the sample of adolescent mothers. One of the plausible explanations could be that their need for dependence was met unconditionally by the kinship group. Most of the adolescents cited family members as supportive.

The adolescent mothers in the study indicate a definite ability to nurture their infants. Unlike the early beginning parenthood studies (LeMasters, 1957; Dyer, 1963) these adolescent mothers gave no obvious indications of stress in beginning parenthood. A critical element that divided the LeMasters (1957) and Dyer (1963) samples from the present study was marriage. The mothers in the early studies were having to meet the needs of marriage and parenthood while the adolescent mothers

were dealing with parenthood without marriage.

The adolescent mothers may have learned acceptance and patience from their own parents and in return demonstrated these behaviors toward their own infants. The greater the acceptance from the kinship group of this temporary bid for dependency, the greater the adolescent mothers ability to accept the infants dependency. Primary support of the adolescent mothers in this study came from their own mothers, grandmothers, siblings, friends and spouses. Adolescent mothers in the experimental group leaned heavily upon their own mothers for support.

It is clear that with or without outside support, mothers in the study viewed their infants positively. When the perceptions are positive, the adolescent mothers are likely to give quality care.

The following conclusions were drawn:

1. Adolescent mothers perceive their infants as no different from the average baby one to two days postpartum.
2. Special efforts by a health-care giver to assist adolescent mothers in becoming acquainted with their infants in order to influence their perceptions were not effective.

3. When no special intervention was made by a health-care giver, adolescent mothers viewed their infants positively.
4. Mothers who have positive perceptions are likely to give quality infant care, which at this time may be equated with custodial care.

Recommendations

The value of a mother-infant acquaintance program for adolescent mothers was assessed in the research study. After considering the findings of the study, the researcher offers the following recommendations for future study.

1. Develop a mother-infant acquaintance program that is at least four months in length, and determine its effects on primiparous adolescent mothers.
2. Analyze the differences between primiparous adolescent mothers and multiparous adolescent mothers regarding their becoming acquainted with their infants.
3. Determine the perceptions of adolescent mothers longitudinally and compare these perceptions with perceptions of older mothers.

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APPENDIX A
NEONATAL PERCEPTION INVENTORIES (NPI)

NEONATAL PERCEPTION INVENTORY I*

AVERAGE BABY

How much crying do you think the average baby does?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much trouble do you think the average baby has in feeding?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much spitting up or vomiting do you think the average baby does?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much difficulty do you think the average baby has in sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty does the average baby have with bowel movements?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble do you think the average baby has in settling down to a predictable pattern of eating and sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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NEONATAL PERCEPTION INVENTORY I*

YOUR BABY

How much crying do you think your baby will do?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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How much trouble do you think your baby will have feeding?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much spitting up or vomiting do you think your baby will do?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty do you think your baby will have sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty do you expect your baby to have with bowel movements?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble do you think that your baby will have settling down to a predictable pattern of eating and sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

NEONATAL PERCEPTION INVENTORY II*

AVERAGE BABY

How much crying do you think the average baby does?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble do you think the average baby has in feeding?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much spitting up or vomiting do you think the average baby does?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty do you think the average baby has in sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty does the average baby have with bowel movements?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble do you think the average baby has in settling down to a predictable pattern of eating and sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

NEONATAL PERCEPTION INVENTORY II*

YOUR BABY

How much crying has your baby done?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble has your baby had feeding?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much spitting up or vomiting has your baby done?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty has your baby had in sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much difficulty has your baby had with bowel movements?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
-----------------------------------	---------------------------------	--------------------------------------	----------------------------------	---------------------------

How much trouble has your baby had in settling down to a predictable pattern of eating and sleeping?

<u> </u> a great deal	<u> </u> a good bit	<u> </u> moderate amount	<u> </u> very little	<u> </u> none
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APPENDIX B
DEGREE OF BOTHER INVENTORY (DBI)

	DEGREE OF BOTHER INVENTORY*			
<i>Crying</i>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<i>Spitting up or vomiting</i>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<i>Sleeping</i>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<i>Feeding</i>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<i>Elimination</i>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<i>Lack of a predictable schedule</i>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<i>Other (specify):</i>				
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	a great deal	somewhat	very little	none

APPENDIX C
INSTRUCTIONS FOR NPI AND DBI

ADMINISTRATION OF THE NPI

Reasons for using the NPI:

To determine adolescent mothers perceptions of babies.

Administering the NPI

The examiner will read the following to the mother.

"We are interested in learning more about the experience of mothers and their babies during the first few weeks after delivery. The more we can learn about mothers and their babies, the better we will be able to help other mothers with their babies. We would appreciate it if you would help other mothers by answering a few questions."

TIME I-Post Partum Day I or II

The mother is handed AVERAGE BABY FORM NPI I.

Instructions

"Although this is your first baby, you probably have some ideas of what most little babies are like. Will you please check the blank you think best describes what most little babies are like."

The mother is then handed the YOUR BABY FORM NPI I.

Instructions

"While it is not possible to know for certain what your baby will be like, you probably have some ideas of what your baby will be like. Please check the blank that you think best describes what your baby will be like."

TIME II-One month later

Instructions

"You have had a chance to live with your baby for a month now. Please check the blank you think best describes:

- (1) Most babies (Average Baby Form NPI 2)
- (2) Your baby (Your Baby Form NPI 2)

Instructions for Degree of Bother Inventory

"Listed below are some of the things that have sometimes bothered other mothers in caring for their babies. We would like to know if you were bothered by any of these. Please place a check in the blank that best describes how much you were bothered by your baby's behavior in regard to these."

APPENDIX D
DEMOGRAPHIC DATA

Demographic Data

NAME _____ CODE _____

ADDRESS _____

TELEPHONE _____

HOSP. REC. # _____

BIRTHDATE _____

PRESENT AGE _____

BREASTFEEDING _____ BOTTLEFEEDING _____

CHILD BIRTH CLASSES YES _____ NO _____

HOW MANY _____

MEDICATIONS DURING LABOR YES _____ NO _____

1. _____

2. _____

3. _____

APGAR OF INFANT AT 5 MINUTES _____

1 MINUTE _____

SEX OF INFANT MALE _____ FEMALE _____

BIRTH DATE _____

TIME OF DELIVERY _____

BIRTH WEIGHT OF INFANT _____

AGE OF FATHER _____

SUPPORT SYSTEM (who will help you care for your baby at home)

MOTHER _____

FATHER _____

BOTH PARENTS _____

SPOUSE _____

OTHER (who) _____

APPENDIX E
CONSENT FOR PARTICIPATION

The University of North Carolina-Greensboro
Department of Child Development/Family Relations
and
Forsyth Memorial Hospital

CONSENT FOR PARTICIPATION IN A STUDY OF
ADOLESCENT MOTHERS' PERCEPTION OF THEIR INFANTS

You are invited to participate in a study about the experiences of first time mothers and their babies during the first few weeks after delivery. The more we learn about other mothers and their babies, the better we will be able to help other mothers with their babies.

If you agree to participate in this study, I would like for you to answer a few questions about what most babies are like, what your baby is like, and what bothers you about caring for your baby. The interview will last approximately fifteen (15) minutes while you are in the hospital and fifteen (15) minutes after you have been home for a month.

The information you give will only be use in this study. It is confidential and your name will never be used in connection with this study. At no time will you be identified with this information.

If you agree to participate, you may withdraw your consent at any time without question.

If you agree to participate, please sign the consent form and write in the date.

If you want the results of this study mailed to you, please indicate in the block below.

☐ Mail the results to me.

☐ Do not mail the results to me.

-----Date-----

Signature

Signature of witness

Signature of investigator

APPENDIX F
RAW DATA

VARIABLE LABELS

a = identification code

b = group

1 = control

2 = telephone

3 = experimental

c = age of mother

d = type of feeding

1 = bottle

2 = breast

3 = switched from breast

e = childbirth classes

1 = did attend

2 = did not attend

f = medications during labor

1 = yes

2 = no

g = Apgar score one minute after birth

h = Apgar score five minutes after birth

i = sex of infant

1 = male

2 = female

j = birthweight of infant

k = age of father

1 = primary support at home

1 = mother

2 = father

3 = both parents

4 = spouse or boyfriend

5 = siblings, friends, grandparents

n = race of mother

1 = black

2 = white

3 = Indian

o = married or not married

1 = single

2 = married

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
<hr/>														
01	1	19	1	2	1	8	9	2	7.9	22	2		1	1
02	1	19	1	2	2	8	9	2	6.0	24	2	5	2	1
03	1	17	1	2	1	8	9	2	7.3	17	5		1	1
04	1	19	1	2	1	3	9	2	7.4	20	1		2	1
05	1	18	1	2	2	8	9	2	7.2	19	5		1	1
06	2	19	1	2	2	9	9	1	7.5	23	5		2	1
07	2	19	1	2	2	9	9	1	6.6	22	5		1	1
08	3	17	1	2	2	1	8	2	7.2	18	1		1	1
09	1	14	1	2	1	9	9	1	7.9	20	1		1	1
10	2	16	1	1	2	8	9	1	7.6	24	4		2	2
11	3	16	1	2	1	8	9	1	6.5	19	1		1	1
12	3	14	1	2	1	9	9	1	7.7	18	1		1	1
13	3	16	1	2	2	8	9	1	6.0	19	1		1	1
14	3	18	1	2	2	8	9	2	6.9	22	5		1	1
15	2	18	2	2	1	8	10	1	8.3	22	4		2	2
16	2	15	1	2	1	8	9	1	7.1	19	1		2	2
17	2	17	1	2	1	8	9	2	6.6	19	1		2	1
18	1	19	1	2	1	8	9	1	7.8	20	1	5	1	1
19	1	18	1	2	1	8	10	2	7.3	23	4		2	2
20	2	18	2	2	1	8	9	2	6.8	21	1		2	2
21	2	18	1	2	2	9	9	1	8.7	18	1	5	1	1
22	2	19	3	1	2	9	9	2	7.7	22	1	4	3	2
23	2	17	1	2	1	9	9	2	9.3	19	1		2	1

24	3	19	1	2	1	8	9	1	6.9	18	5		1	1
25	1	15	1	2	1	9	10	2	8.4	19	1		2	1
26	3	18	1	1	1	9	10	2	7.9	24	1	4	2	2
27	2	17	1	2	1	9	9	1	9.3	19	1		2	2
28	1	19	1	2	1	8	8	1	5.5	19	5		2	1
29	1	18	1	2	1	3	9	1	6.8	17	1		1	1
30	3	17	3	2	1	7	9	2	7.9	17	4	5	2	2
31	3	13	1	2	1	7	9	1	6.5	17	1	5	1	1
32	1	18	2	2	2	3	8	2	8.0	31	1		2	1
33	1	19	1	2	2	8	9	2	6.2	22	1		2	2
34	1	17	1	2	1	8	10	2	7.6	19	1		2	2
35	2	19	1	2	2	9	9	2	8.3	19	4		2	2
36	1	18	1	2	1	8	9	1	8.4	15	4	5	2	1
37	3	15	1	2	2	6	8	2	5.9	17	1		1	1
38	3	19	1	2	2	9	9	2	6.4	19	1	5	1	1
39	3	16	1	2	1	7	9	2	7.9	22	5		2	1
40	3	19	1	2	2	8	9	2	6.6	22	1		1	1
41	2	18	1	2	1	8	10	2	7.0	18	1		1	1
42	3	17	1	2	2	8	9	2	5.6	17	1		1	1
43	3	17	1	2	1	8	9	1	7.2	21	1		2	2
44	2	19	1	2	1	8	9	2	6.1	18	1		1	1
45	1	19	1	2	1	8	9	1	7.2	18	1		1	1
46	2	15	1	2	2	8	9	1	7.4	21	5		1	1
47	2	19	1	2	2		9	2	7.9	19	5		1	1

a = AVERAGE BABY PERCEPTION SCORE AT TIME ONE

b = YOUR BABY PERCEPTION SCORE AT TIME ONE

c = AVERAGE BABY PERCEPTION SCORE AT TIME TWO

d = YOUR BABY PERCEPTION SCORE AT TIME TWO

e = NPI1 SCORE

f = NPI2 SCORE

g = DEGREE OF BOTHER SCORE

a	b	c	d	e	f	g
19	18	+1	20	21	-1	21
19	17	+2	21	16	+5	19
20	16	4	15	10	5	22
20	22	-2	17	10	+7	23
14	13	+1	16	18	-2	15
19	14	+5	19	18	+1	15
19	15	+4	17	16	+1	15
19	15	+4	19	17	+2	13
22	20	+1	20	16	+4	19
21	16	+5	18	15	+3	15
21	15	+6	22	19	+3	13
18	16	+2	18	19	-1	20
18	16	+2	20	21	-1	21
24	18	+6	24	17	+1	18
22	20	+2	17	12	+5	19
18	19	-1	21	15	+6	16

16	15	+1	16	15	+1	19
16	16	0	23	22	+1	17
19	20	-1	19	18	+1	13
15	13	+2	16	17	-1	15
20	16	+4	18	16	+2	24
17	14	+3	18	19	-1	17
20	15	+5	20	14	+6	19
23	16	+7	28	20	+8	21
16	16	0	14	12	+2	17
20	21	-1	16	12	+4	20
13	13	0	20	18	+2	16
14	11	+3				
22	15	+7	18	11	+7	19
22	15	+7	18	12	+6	14
14	14	0	15	11	+3	21
24	20	+4				
21	17	+4	13	13	+0	22
16	17	-1	20	16	+4	20
18	16	+2	19	18	+1	15
18	19	-1				
17	13	+4	17	12	+5	19
21	19	+3	19	16	+3	16
15	15	0	14	11	+3	20
15	13	+2	16	15	+1	19
22	17	+5	18	14	+4	17
18	19	-1	22	19	+3	16

21	18	+3				
17	15	+2	19	18	+1	18
17	15	+2	15	13	+2	16
19	19	0	19	21	-2	11
12	11	+1	11	11	0	20

Q1 TO Q12 = RESPONSES TO NPI1

Q13 TO Q24 = RESPONSES TO NPI2

Q25 TO Q30 = RESPONSES TO DBI

Q1 TO Q24 5 'A GREAT DEAL'

4 'A GOOD BIT'

3 'MODERATE AMOUNT'

2 'VERY LITTLE'

1 'NONE'

Q25 TO Q30 1 'A GREAT DEAL'

2 'SOMEWHAT'

3 'VERY LITTLE'

4 'NONE'

Q1 'HOW MUCH CRYING DO YOU THINK THE AVERAGE BABY DOES?'

Q2 'HOW MUCH TROUBLE DO YOU THINK THE AVERAGE BABY HAS IN FEEDING?'

Q3 'HOW MUCH SPITTING UP OR VOMITING DO YOU THINK THE AVERAGE BABY DOES?'

Q4 'HOW MUCH DIFFICULTY DO YOU THINK THE AVERAGE BABY HAS IN SLEEPING?'

Q5 'HOW MUCH DIFFICULTY DOES THE AVERAGE BABY HAVE WITH BOWEL MOVEMENTS?'

Q6 'HOW MUCH TROUBLE DO YOU THINK THE AVERAGE BABY HAS IN SETTLING DOWN TO A
PREDICTABLE PATTERN OF EATING AND SLEEPING?'

Q7 'HOW MUCH CRYING DO YOU THINK YOUR BABY WILL DO?'

Q8 'HOW MUCH TROUBLE DO YOU THINK YOUR BABY WILL HAVE IN FEEDING?'

Q9 'HOW MUCH SPITTING UP OR VOMITING DO YOU THINK YOUR BABY WILL DO?'

Q10 'HOW MUCH DIFFICULTY DO YOU THINK YOUR BABY WILL HAVE SLEEPING?'

Q11 'HOW MUCH DIFFICULTY DO YOU EXPECT YOUR BABY TO HAVE WITH BOWEL
MOVEMENTS?'

Q12 'HOW MUCH TROUBLE DO YOU THINK THAT YOUR BABY WILL HAVE SETTLING DOWN TO
A PREDICTABLE PATTERN OF EATING AND SLEEPING?'

Q13 'HOW MUCH CRYING DO YOU THINK THE AVERAGE BABY DOES?'

Q14 'HOW MUCH TROUBLE DO YOU THINK THE AVERAGE BABY HAS IN FEEDING?'

Q15 'HOW MUCH SPITTING UP OR VOMITING DO YOU THINK THE AVERAGE BABY DOES?'

Q16 'HOW MUCH DIFFICULTY DO YOU THINK THE AVERAGE BABY HAS IN SLEEPING?'

Q17 'HOW MUCH DIFFICULTY DOES THE AVERAGE BABY HAVE WITH BOWEL MOVEMENT?'

Q18 'HOW MUCH TROUBLE DO YOU THINK THE AVERAGE BABY HAS IN SETTLING DOWN TO A
PREDICTABLE PATTERN OF EATING AND SLEEPING?'

Q19 'HOW MUCH CRYING HAS YOUR BABY DONE?'

Q20 'HOW MUCH TROUBLE HAS YOUR BABY HAD FEEDING?'

Q21 'HOW MUCH SPITTING UP OR VOMITING HAS YOUR BABY DONE?'

Q22 'HOW MUCH DIFFICULTY HAS YOUR BABY HAD IN SLEEPING?'

Q23 'HOW MUCH DIFFICULTY HAS YOUR BABY HAD WITH BOWEL MOVEMENTS?'

Q24 'HOW MUCH TROUBLE HAS YOUR BABY HAD IN SETTLING DOWN TO A PREDICTABLE
PATTERN OF EATING AND SLEEPING?'

Q25 'CRYING'

Q26 'SPITTING UP OR VOMITING'

Q27 'SLEEPING'

Q28 'FEEDING'

Q29 'ELIMINATION'

Q30 'LACK OF A PREDICTABLE SCHEDULE'

Q1-Q6	Q7-Q12	Q13-Q18	Q19-Q24	Q25-30
333433	323334	434334	342223	343443
434224	424223	333524	423434	324343
344522	323422	352122	412111	344344
334532	344533	333323	222121	444344
232223	322223	333232	423333	141414
433333	332222	423332	422422	232332
544222	324222	323225	323225	233442
325324	223323	325324	325311	322231
435343	334343	543233	522412	324433
434433	323323	522324	222252	134313
414354	423222	534235	432235	133114
433242	432232	423423	523324	434423
422223	222523	422253	444243	334443
344544	352323	423555	342152	143334
433435	343334	422315	312213	334243
435222	533233	343542	432222	332323
324232	323232	332224	332223	333433
333223	224233	325535	523525	331442
434422	434423	434422	423423	222422
323232	322222	333223	333224	322332
423234	233233	323534	323331	444444
252125	222215	322425	322325	121243
434243	233223	333434	222332	243343

244454	442141	455554	512444	244443
323233	233233	222233	212232	332343
433334	433232	322333	211121	344424
423311	212311			
345253	233223	544122	312122	234443
335335	513132	434322	323322	243122
322223	232223	423222	242211	443334
355335	335333			
434244	333233	322123	222223	443443
434223	432233	425234	213121	334334
323334	412342	432433	333333	122434
434232	332333			
343245	334234	334432	323413	234241
433233	322122	333233	223212	323443
322233	232233	322223	222212	344333
443434	323234	342432	322232	333332
424212	324112	523213	512212	134443
242334	254422	253552	342531	333133
425244	324234			
443222	324222	422443	422442	343444
332234	232233	322323	223213	332332
233344	434323	244225	243255	411113
314112	214112	312212	312212	334444
323212	233212	324344	414324	242413
